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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,840	05/17/2006	Sung-Young Lee	08178.0002UI	5762
23859 7590 10/17/2007 NEEDLE & ROSENBERG, P.C. SUITE 1000 999 PEACHTREE STREET ATLANTA, GA 30309-3915			EXAMINER FASTOVSKY, LEONID M	
			ART UNIT 3742	PAPER NUMBER
			MAIL DATE 10/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/579,840

Applicant(s)

LEE, SUNG-YOUNG

Examiner

Leonid M. Fastovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 5,6 and 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20070521.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Foote et al (6462317).

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Foote teaches a heat rod assembly 2 for a pre-heater that can be used in a vehicle, the heat rod assembly comprising: a channel type lower heat rod; an insulator installed at a bottom portion of the lower heat rod 6; a positive terminal 10 fixedly installed on the insulator 8 lengthwise along the insulator; a PTC device 12 coupled to the insulator by interposing the positive terminal therebetween; and an upper heat rod 14 for covering an opening section of the lower heat rod.

As to claim 2, Foote teaches the heat rod assembly as claimed in claim 1, wherein an upper edge section 16 of the lower heat rod is inwardly bent such that the upper edge section covers an edge section of the upper heat rod.

As to claim 7, Foote teaches the heat rod assembly 2 as claimed in claim 1, wherein the PTC device is positioned on the insulator 8 corresponding to openings formed in the insulator by interposing the positive terminal 10 between the PTC device and the insulator.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foote in view of Kim (KR200235499).

Foote discloses substantially the claimed invention, but does not disclose that the inner width of the lower heat rod is identical to an outer width of the insulator and the insulator is formed with a bottom recess.

Kim discloses a heater rod assembly 10 comprising a lower heater rod 1, a PTC element 13 and an insulator 14, wherein an inner width of the lower heat rod 1 is identical to an outer width of the insulator 14.

It would have been obvious to one having ordinary skill in the art to modify Foote's invention to make the inner width of the lower heat rod is identical to an outer width of the insulator as taught by Kim and also make a recess in the bottom of the insulator 8 in order to improve the reliability and stability of the heat rod assembly.

7. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foote in view of Bohlender et al (7098426).

Foote discloses substantially the claimed invention, but does not disclose the pre-heater comprising the heat rod assembly a heat pin assembly formed at both sides of the heat rod assembly in parallel to each other; a negative terminal aligned in parallel to the heat pin assembly; side frames coupled to both sides of a coupling structure consisting of the heat rod assembly, the heat pin assembly and the negative terminal; and housings for coupling the heat rod assembly, the heat pin assembly, the negative terminal, and the frames with each other at front and rear portions thereof, and a coupling unit.

Bohlender discloses the pre-heater comprising the heat rod assembly with a PTC element 30, a heat pin assembly 23,24 formed at both sides of the heat rod assembly in

parallel to each other; a negative terminal 27 aligned in parallel to the heat pin assembly; two side frames 3 coupled to both sides of a coupling structure consisting of the heat rod assembly, the heat pin assembly and the negative terminal; and housings 4 and 5 for coupling the heat rod assembly, the heat pin assembly, the negative terminal, and the frames with each other at front and rear portions thereof.

As to claims 9-10, Bohlender discloses a coupling unit comprising projections 28 of the positioning frame 22 such that radiators 23,24 can be clipped onto positioning frames 3 (col. 5, lines 50-68 and col. 6, lines 1-8).

It would have been obvious to one having ordinary skill in the art to modify Foote's invention to include a heat pin assembly, a negative terminal, frames, housing and a coupling assembly as taught by Bohlender in order to integrate it air conditioning units having a conventional structural design (col. 2, lines 18-24).

#### Allowable Subject Matter

8. Claims 5-6 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: claims 5-6 and 11-13 are indicated to be allowable because the prior art of record does not teach or fairly suggest the heat rod assembly wherein the insulator is

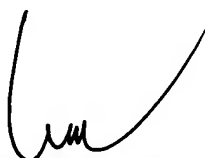
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provided with fixing protrusions which are inserted into the coupling holes formed in the positive terminal and the side frames have bent clips locked with flanges of the frames.

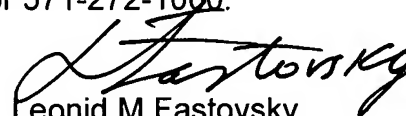
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M. Fastovsky whose telephone number is 571-272-4778. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



TU BA HOANG  
SUPERVISORY PATENT EXAMINER



Leonid M Fastovsky  
Examiner  
Art Unit 3742

lmf